ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 3.4
IJAR 2015; 1(4): 47-54
www.allresearchjournal.com
Received: 25-02-2015
Accepted: 07-03-2015

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Suggestive case study on evidence of effectiveness of customized education training based on the outcomes of cognitive ability testing to develop high mental (cognitive) abilities & personality in students between 14-20 year age group to achieve maximum employability

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Abstract
The present research was conducted to provide an insight into those scientific methodologies that can aid to reorder human intelligence to enhance and ameliorate learning process in students, to scientifically progress towards a suitable career choice for a more meaningful & successful life. The subjects aged between 14-20 years and hailed from urban, semi-urban & rural backgrounds. They were tested on cognitive ability tests in three phases. Initially 400 students were selected for the present longitudinal study. Out of them, 287 students appeared for test 2 after completing 180 days of customized training. Finally, 213 students appeared for test 3 after attending 360 days of customized training solution. It was witnessed that a universal measurement matrix & methodology can help to understand human cognition & to reorder it, to the desired levels. Further, a constant enhancement of all students from their initial natural ability level to their final gifted ability level was noticed in a year.

Keywords: Cognition, Personality, Customized Education Training

Introduction
The trends of employment are changing fast. Corporate/Valued Organizations hire those who have right blend of cognitive abilities and passion to work for. People who are quick decision makers, focused, intelligent, energetic and are passionate. In nutshell, package performers are valued more than bare academic class. Employers look for those individuals who can add-on a value to the collective intellect of the organization. Adding value to an individual is a gradual process, which if implemented at right time can do wonders in Career Management. When careers are closely related to one's natural ability & core competence, success is a big guarantee. Enhancing Core Competence of an individual largely depends on the cognitive abilities and learning style of an individual. Research & analysis reveal that what works for one individual may not work for other in terms of success despite having same qualification and career choice. A sample study conducted on 213 students reveals how customized education program based on cognitive ability tasks helps enhance the desired cognition & personality of students, thereby filling in the gaps in current level & desired level of development. Guesswork in education & career choice proves lethal to the future prospects of a student. Though passion is the buzzword these days to select and pick a career, but passion alone cannot deliver the goods. Until an individual has a high degree cognitive skill sets, success will always remain elusive & by-chance. A big neuro myth is that a high IQ level or academic intelligence shapes a successful career. The fact is that there are other cognitive factors that play a more prominent role in shaping our future. These are focus, decision making ability, self-estimation level, passion and creativity. We can measure all these factors in numeric values so that we can reorder them to desired levels.

There is still a lot to be done to establish concrete outcomes and conclusions in this direction. In today's world knowledge or high Intelligence are not the only factors that determine success. Success requires a focused mind, strong & quick decision making ability, IQ, creativity & early grooming of natural abilities. Measuring cognitive abilities is the first step to achieve all that we dream. Measurement is the process of assigning numerical values to an aspect of phenomenon being studied. Like weight can be measured in kilograms. Time can be measured in seconds. Length in meters and other variables like Temperature in degrees. And so is Human Intelligence. Today we can measure, enhance and reorder cognitive abilities with new scale sets as:-

- To achieve, elevate & reorder anything we need to measure it.
- IQ, Focus, Decision Making Ability are not constant cognitive abilities but variable.
- Learning style & Gifted Ability can be identified and nurtured to the highest levels.
- All these factors can enhanced to desired levels with customized education & proper training.
- We can scientifically create successful careers without stress.

2. Method

This research study has been carried out with a random sample size of 400 participants initially across 14-20 year age group from urban, semi-urban & rural backgrounds. But at the later stage, the final sample count was 213.

2.1 Participants

Purpose specific longitudinal study was carried out on a final sample size of 213 students to establish the findings of proposed theory. Statistically validated results were also put under practice to gather more empirical evidences for future research. Through our work we found out that a universal measurement matrix & methodology can help us serve better in understanding human cognition & to reorder it to the desired levels.

2.2 Phases Of Study

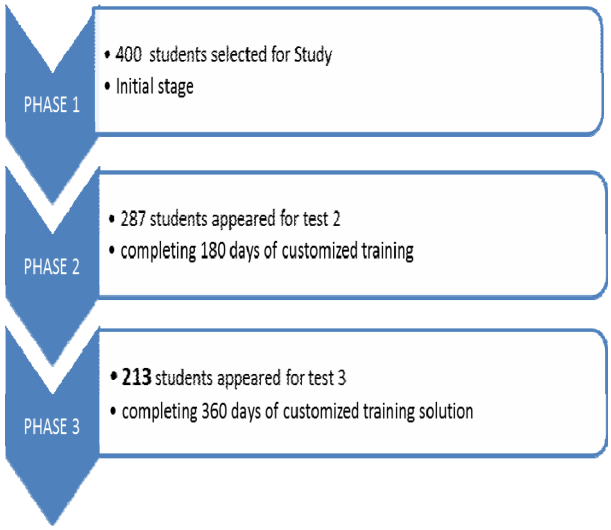

Fig 1: Design of the Research work

2.3 Procedure

The first step included sample selection and then, rapport was formed with the subjects.

The subjects were tested thrice, at initial stage, after 180 days of training and finally after 360 days of training. Tests were given to the subjects after giving them detailed instructions

2.4 Statistical Analysis

Once the data was obtained, it was coded, tabulated and analyzed, keeping in mind the objectives of the study. Appropriate statistical tools were used to draw meaningful inferences.

3 Results And Discussion

TEST 1 (Between July 2012 – Sep 2012) Cognitive Ability Test (As per Test Factors Outcome)

Table 1: Number of Students according to IQ Range after Primary Test 1

IQ Range	60-70 70-89	89-111	111-120 120-150 150-180	180+	Total
No. of students	161 19	18	4 7 2	2	213

Table 2: Number of Students according to Focus Factor Range after Primary Test 1

Focus Factor	Below 30 30-50	50-75	75-90	90-120	120-150	150+	Total
No. of students	112 43	29	4	9	9	7	213

Table 3: Number of students according to DMA (Decision Making Ability) Range after Primary Test 1

DMA	Below 0.35 0.35-0.50 0.50-0.65 0.65-0.80 0.80-1.0	1-1.4	1.4-1.7	1.7+	Total
No. of students	165 20 8 9 6	2	1	2	213

Table 4: Number of Students Categorized as per their learning style

Learning Style	No of Students
Linguistic	35
Logical	42
Visual	22
Musical	11
Kinesthetic	26
Interpersonal	29
Intrapersonal	17
Naturalist	31

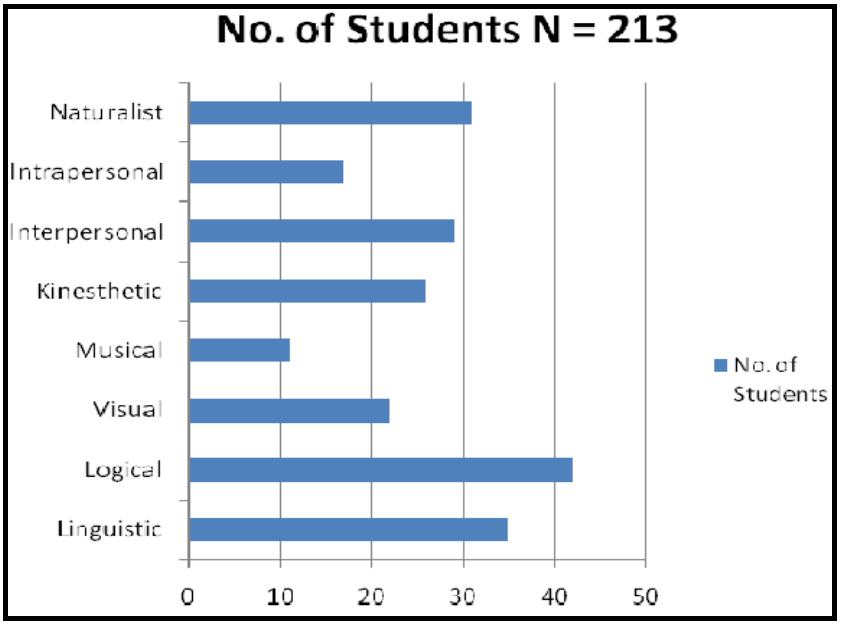

Fig 2: Number of Students Categorized as per their learning style

Table 5: Number of students – As per Area/Background

Area/Background	Number of students
urban	79
semi urban	60
rural	74

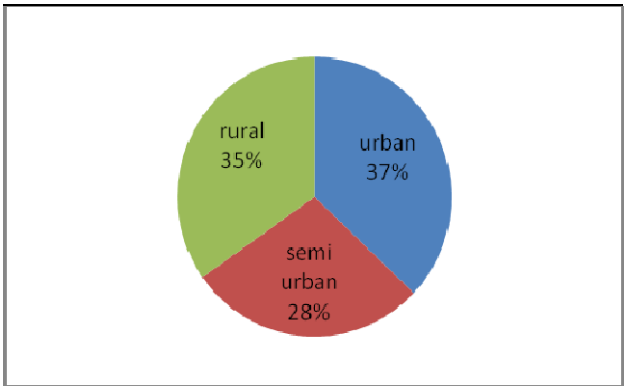

Fig 3: Number of students – As per Area/Background

Table 6: Number of students those who fall under desired level of development after Primary Test 1 based on Cognitive Ability Factors

Desired	No. of Students out of Total 213
IQ	15
Focus	29
DMA	20
Average	21

This shows that approx 10% of the students that is 21 have desired level of cognitive development out of total 213 students (after primary test 1)

After Primary Test 1 – These 213 students were imparted 180 days of customized education training based on cognitive ability worksheets designed as per their learning style & gifted ability. Every worksheet to be done is on a time bound manner. After completing 180 days & approx. 400 worksheets individually these 213 students were again tested on the same cognitive ability factors to find out the standard deviation shift from their initial levels.

Test Results after 180 Days of Training – To enhance Mental Ability & Personality
TEST 2 (Between Jan 2013 – Mar 2013) (Test Factors Outcome)

Table 7: Number of Students according to IQ Range after 180 days of training Test 2

IQ Range	60-70	70-89	89-111	111-120	120-150	150-180	180+	Total
No. of Students	0	120	60	18	4	7	4	213

Table 8: Number of Students according to Focus Factor Range after 180 days of training | Test 2

Focus Factor	Below 30	30-50	50-75	75-90	90-120	120-150	150+	Total
No. of Students	0	93	62	29	4	9	16	213

Table 9: Number of students according to DMA Range after 180 days of training | Test 2

DMA	Below 0.35	0.35-0.50	0.50-0.65	0.65-0.80	0.80-1.0	1-1.4	1.4-1.7	1.7+	Total
No. of Students	0	134	53	8	9	6	2	1	213

Table 10: Number of students those who fall under desired level of development after 180 days of training & evaluated on a similar Test 2 | Based on Cognitive Ability Factors

Desired	No. of Students out of Total 213	Student Increase from initial level
IQ	33	18 more students
Focus	58	29 more students
DMA	26	6 more students
Average	39	18 more students

This shows that approx. 18 more students out of 213 have shifted to next level of desired development after 180 days of training.

After Test 2 – these 213 students were imparted remaining 180 days of customized education training to complete 360 day modules. The outcomes are as follows:

Test Results after 360 Days of Training – to enhance Mental Ability & Personality
TEST 3 (Between Aug 2013 – Oct 2013) (Test Factors Outcome)

Table 11: Number of Students according to IQ Range after 360 days of training | Test 3

IQ Range	60-70	70-89	89-111	111-120	120-150	150-180	180+	Total
No. of students	0	0	120	60	18	4	11	213

Table 12: Number of Students according to Focus Factor Range after 360 days of training | Test 3

Focus Factor	Below 30	30-50	50-75	75-90	90-120	120-150	150+	Total
No. of students	0	0	93	62	29	4	25	213

Table 13: Number of students according to DMA Range after 360 days of training | Test 3

DMA	Below 0.35	0.35-0.50	0.50-0.65	0.65-0.80	0.80-1.0	1-1.4	1.4-1.7	1.7+	Total
No. of students	0	1	134	53	8	9	6	2	213

Table 14: Number of students those who fall under desired level of development after 360 days of training & valuated on a similar Test 3 | Based on Cognitive Ability Factors

Desired	No. of Students out of Total 213	Student Increase from initial level
IQ	93	78 more students
Focus	120	91 more students
DMA	78	58 more students
Average	97	76 more students

Out of initial 21 students now an average of 97 students were found to be high on mental abilities and personality after 360 days of training program. That is a jump from initial 10% to 46% of students. Even the remaining 54% of students have upgraded to pre-final levels of development. No students were found to be in weaker range.

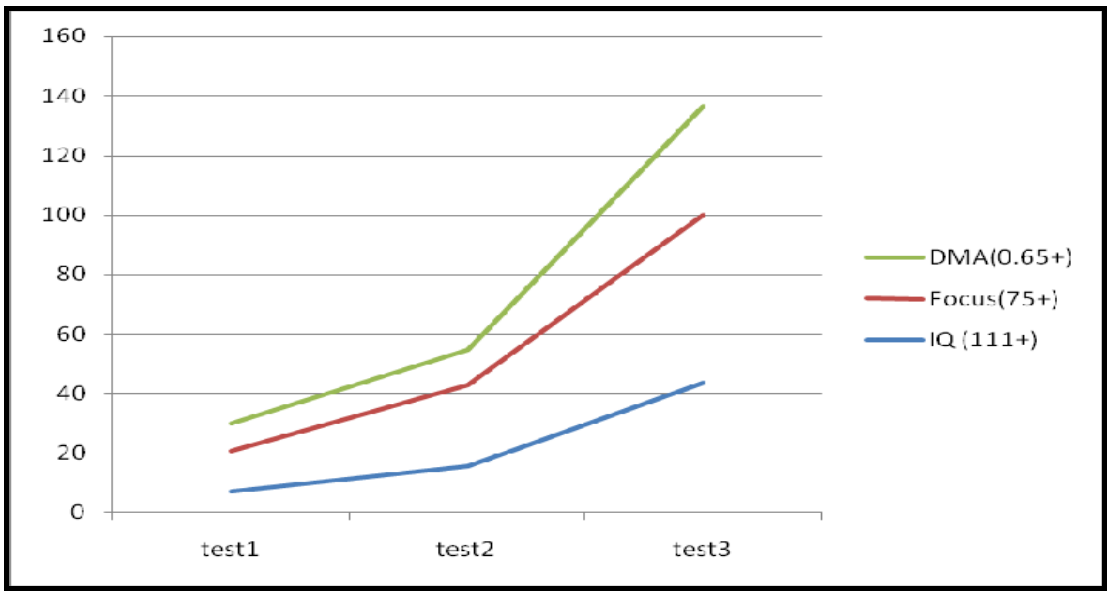

Fig 4: Number of students with desired level of cognitive ability factors after each test

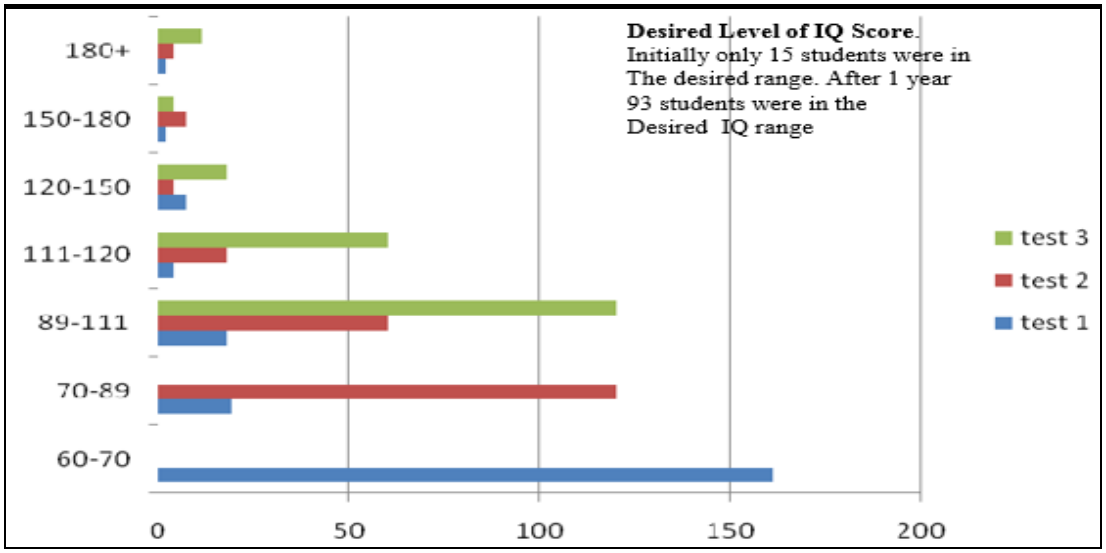

Fig 5: Comparison of 3 Cognitive Ability Factors & Number of Students **(**Shift in IQ Levels of students after Each Test & Training**)**

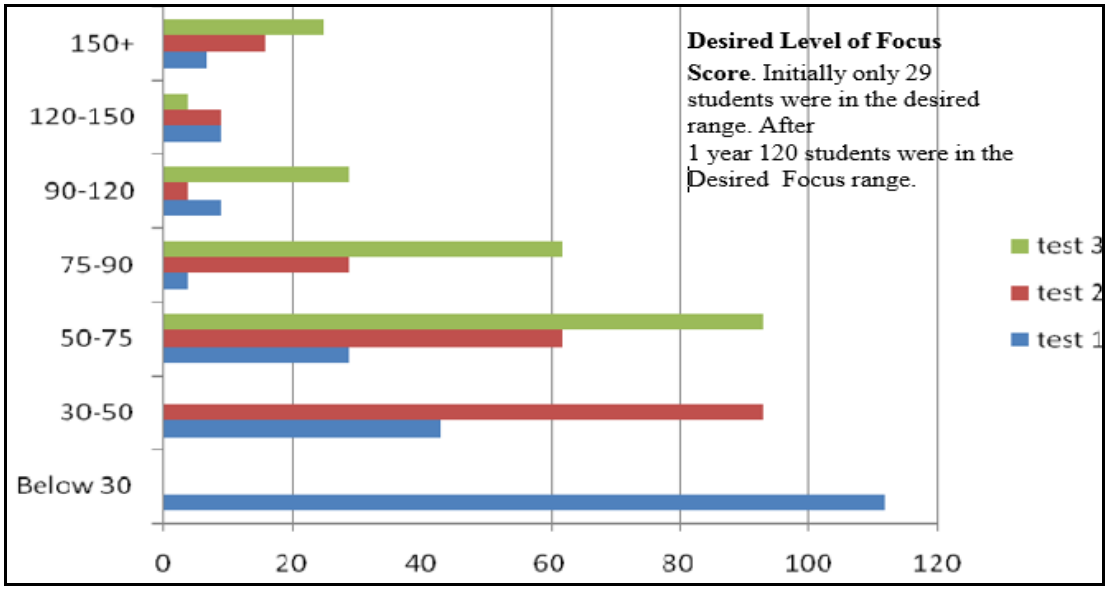

Fig 6: Shift in Focus Levels of students after Each Test & Training

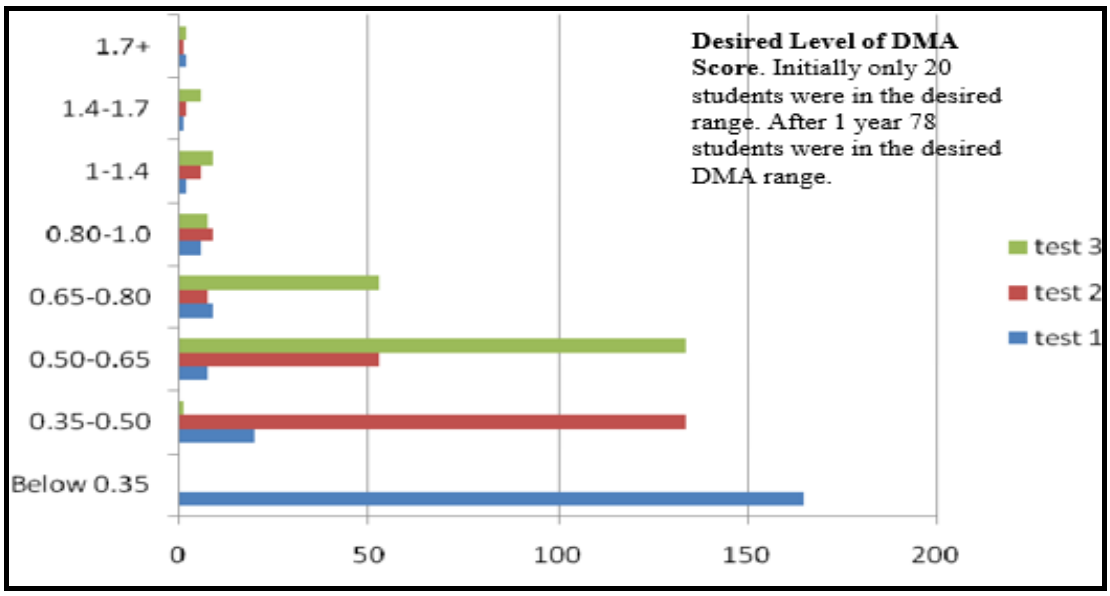

Fig 7: Shift in DMA (Decision Making Ability) Levels of students after Each Test & Training

Shift in Natural Ability Levels of students after Training

The following chart shows a constant up-scale & enhancement of all 213 students from their initial natural ability level to their final gifted ability level in a year. This shows that students can now understand their learning style much better & know how to utilize it to their fullest potential, thereby gradually increasing their learning process. All students were assessed on a scale of 1-10 of their multiple intelligence levels in phase 1 Test 1. Based on the test result, their gifted ability & learning style was assessed. After 360 days of training a constant shift can be seen as a conversion of their natural ability towards passion.

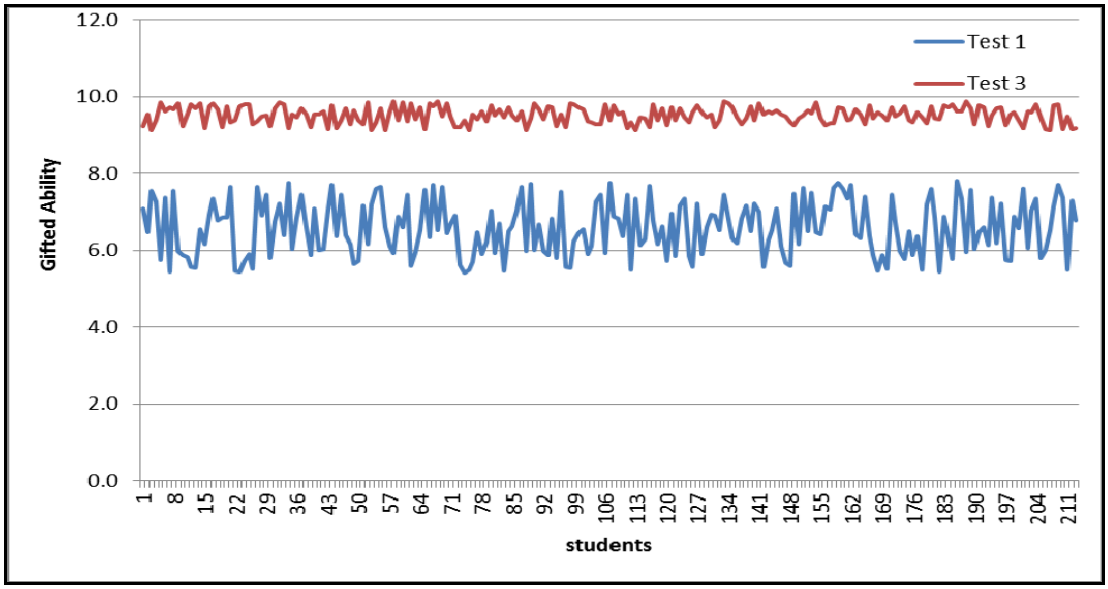

Fig 8: Shift in Natural Ability Levels of students after Training

Table 15: Mean, Standard deviation, standard error, t-values and level of Significance of Gifted Ability of subjects between Test 1, Test 3

TEST	MEAN	S.D.	S.E.M	t - value	P-value	Lev. of sig.
Test 1	6.588	0.726	0.050	55.47	<0.0001	Extremely Statistically Significant
Test 3	9.466	0.215	0.015			

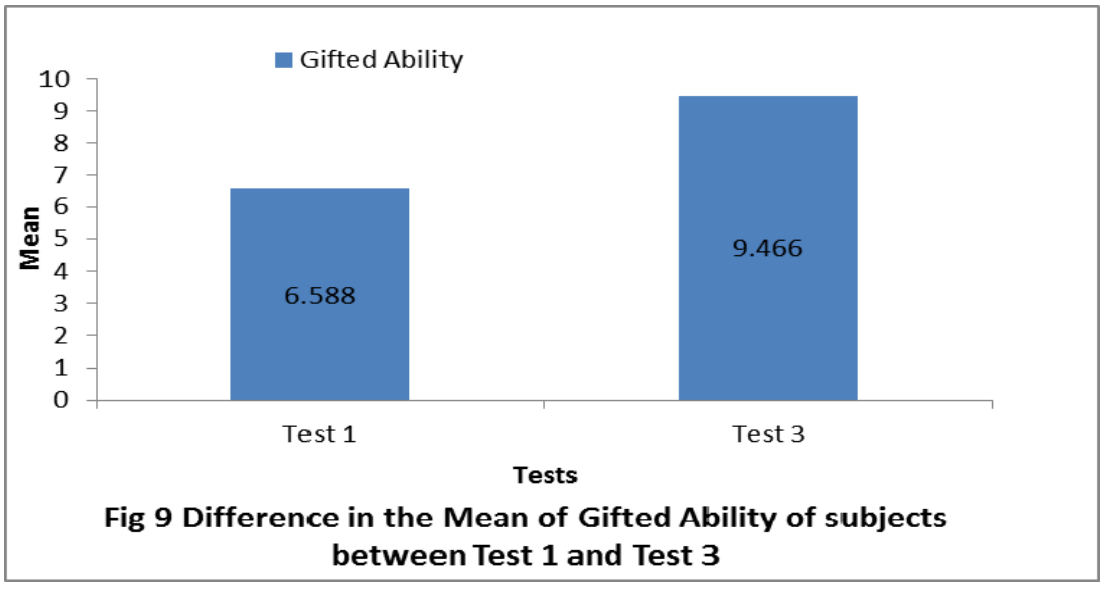

Fig 9 Difference in the Mean of Gifted Ability of subjects between Test 1 and Test 3

The Major Findings–

- Human cognition has an initial & final value. The desired value lies between these two values. If we can measure the current cognition value, we can work towards reaching the desired value.
- There are certain cognitive ability factors that can be understood as super sets for complex cognitive functions. These are decision making ability, creativity, self-estimation, focus factor & gifted ability. All of these can be measured in predefined numerical value system & can be reordered by applying customized education methodology, which is later termed as designing success.
- All of us are born with a certain cognitive capacity, which is different in different people. Reordering of cognitive abilities is in direct correlation with natural

cognitive capacity and learning environment, which is further influenced by early diagnosis of this capacity, action plan, learning style and overall learning process initiated in this direction. We shall assess the learning style of a student and design the customized curriculum around their gifted ability.

4 Conclusion

An extremely significant drift towards higher level of Cognitive Abilities was recorded after the completion of 360 days of customized training solution.

Learning process of students depend on their cognitive abilities. We can measure the cognitive abilities of students with the help of cognitive ability tests. The current level of development can be measured & reordered to achieve desired levels. To do this, we need to assess their individual learning style & gifted ability so that we can design a task based time bound customized training solution for them. There are 2 types of factors that can help design success and enhance the learning process in students. These factors are further categorized as **artificial factors** & **natural factors**. By artificial factors we mean those core cognitive ability factors which can be reordered when identified at an early stage. Natural factors are those factors that have a strong influence in this process like gifted ability, learning style and the scale of multiple intelligences. When education is delivered keeping in mind the learning style of a student and the curriculum is customized around the gifted ability, it is possible to reorder the core cognitive ability factors.

Learning process, cognitive abilities & personality of the students can improve drastically if they are provided required training as per their learning style

4. Acknowledgement

Authors express indebtedness to the Almighty, who is the apostle of strength. Authors are inevitably grateful to the subjects and all those directly as well as indirectly involved in the auspicious research work. Genuine thanks are expressed to all the authors/researches whose work is referred for making the present study a real success.

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